

DOCUMENT RESUME

ED 283 226

CS 505 630

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TITLE PONS Assessment of Deaf College Students' Nonverbal Decoding Skills.
PUB DATE 21 May 87
NOTE 49p.; Paper presented at the Annual Meeting of the Eastern Communication Association (78th, Syracuse, NY, May 18-21, 1987).
PUB TYPE Speeches/Conference Papers (150) -- Reports - Research/Technical (143) -- Tests/Evaluation Instruments (160)
EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS Body Language; Communication Research; Communication Skills; *Deafness; Educational Assessment; Elementary Education; Eye Contact; Facial Expressions; Higher Education; *Nonverbal Communication; *Nonverbal Learning; *Nonverbal Tests; Research Methodology; Sign Language; *Skill Analysis; *Total Communication
IDENTIFIERS Profile of Nonverbal Sensitivity

ABSTRACT

If nonverbal decoding skills are impaired by cultural expectations and training, the deaf person will be further isolated from social participation. To identify factors that might account for inaccurate nonverbal decoding of deaf subjects, a study compared the decoding abilities of three groups of deaf college students (N=76) using R. Rosenthal's Profile Nonverbal Sensitivity (PONS) test. The investigation defined three independent variables (gender, family communication mode, and type of elementary school) and hypothesized higher test scores for: (1) females than for males, (2) subjects whose family communication mode was signing rather than speech or writing, and (3) subjects who attended mainstream rather than residential elementary schools. The results supported none of the hypotheses; an analysis of variance indicated no significant differences within these groups, a finding that contradicts previous research. However, in combination some variables did influence nonverbal decoding on the PONS test; for example, in residential schools subjects whose family communication mode was sign language scored higher than subjects whose family communication mode was oral/writing, while the reverse was true in mainstream schools. The results of the investigation recommend that to obtain a more accurate picture of the influence of enculturation upon deaf children, future research should use subjects more carefully selected for the variables of family communication mode and type of elementary school, and the test should be given to subjects whose parents are also deaf and to both residential and public school subjects. Further, the subjects should have attended the same type of school for their entire elementary school years. (JG)

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PONS ASSESSMENT OF
DEAF COLLEGE STUDENTS' NONVERBAL DECODING SKILLS

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Presented at the Eastern Communication Association Convention
Syracuse, New York
May 21, 1987

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ABSTRACT

PONS ASSESSMENT OF DEAF COLLEGE STUDENTS' NONVERBAL DECODING SKILL

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The nonverbal decoding skills of seventy-six deaf college students were assessed using Robert Rosenthal's Profile of Nonverbal Sensitivity (PONS) test. The study examined factors which may account for inaccurate nonverbal decoding of deaf subjects. Rather than compare deaf with hearing subjects, this study compared three groups of deaf college students. The premise of the study was that there would be a significant difference in the decoding abilities of these selected groups. Three independent variables were investigated, including 1) sex of subject, 2) family communication mode and 3) type of elementary school. The following hypotheses were posited for study. H1: Females who are deaf obtain significantly higher scores on the PONS total and subtest scores than do males who are deaf. H2: Deaf subjects whose parents sign to them will obtain higher scores than subjects whose parents use speech or writing. H3: Deaf subjects who attended mainstream elementary schools will obtain higher PONS test scores than deaf subjects who attended residential elementary schools. An Analysis of Variance was conducted to determine the interaction effect of the three independent variables. The resulting F ratio indicates that there were no significant main effects for these factors upon the PONS score at the predetermined .05 level. However, there was a significant three-way interaction among the factors of sex of subject, family communication mode and type of elementary school ($F = 3.98$, $df 1$; $p \leq .05$). ANOVAs performed on each of the PONS subtests revealed a significant two-way interaction between family communication mode and type of elementary schooling ($F = 4.18$, $df 1$, $p \leq .05$) on the body-only subtest. The study discusses the possible reasons for these results and suggests some areas for future research.

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DEAF COLLEGE STUDENTS' NONVERBAL DECODING SKILL

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INTRODUCTION

The ability to encode and decode nonverbal messages accurately is an important aspect of our daily communication with others. Communication theorist Ray Birdwhistell (1970) observed that in a normal two-person conversation, the verbal components carry less than 35 percent of the social meaning of the situation; the remaining 65 percent of the social meaning is conveyed through nonverbal behaviors. For people who are deaf, nonverbal interaction provides one of the major interpersonal communication links with the hearing society; it conveys cues for understanding speechreading and verbal meaning as well as attitudes and feelings. Accuracy in decoding nonverbal facial expressions, gestures and body movements, then, is crucial to deaf people's message comprehension and effective social relationships.

Hearing people make certain assumptions about the nonverbal decoding skills of deaf people. They assume, for example, that deaf people will be astute interpreters of body language since they use the visual channel for receiving messages. However, previous research measuring deaf people's ability to decode nonverbal messages has resulted in lower performance scores when

compared to test scores of hearing people (Schiff, 1973; Odom, 1973; Rosenthal, 1979; and Haynes, 1981). Researchers' opinions concerning the reasons for these differences are inconclusive.

The study reported in this paper examined the factors which may account for inaccurate nonverbal decoding of deaf subjects. Rather than compare deaf with hearing subjects, this study compared three groups of deaf college students. The premise of the study was that there would be a significant difference in the decoding abilities of these selected groups. Three independent variables were investigated. They included, (1) sex of subject, (2) family communication mode, and (3) type of elementary schooling. The following review of literature describes the importance of these variables.

REVIEW OF LITERATURE

The literature reviewed for this study explored three major areas: (1) previous nonverbal research involving deaf subjects, (2) communication and culture of the deaf, and (3) nonverbal test design.

Nonverbal Research of Deaf Subjects

Several research studies (Schiff, 1973; Holton, 1976; Rosenthal, 1979; Haynes, 1981) of nonverbal decoding skills have indicated that deaf subjects obtain significantly lower test scores than hearing subjects. For example, Schiff's study (1973) revealed that (1) deaf subjects tend to judge facial expression

as "more neutral" than hearing subjects and that (2) hearing and deaf groups differ in their extraction of social information from the eye region of the face, as well as from gross motor activity.

Studies by Rosenthal, Hall, DiMatteo, Rogers and Archer (1979), developers of the Profile of Nonverbal Sensitivity (PONS) test, found conflicting test results in two studies of deaf subjects. One study of thirty male and female subjects (ages ten to fifteen) indicated that less hearing impaired younger subjects and more impaired older subjects performed relatively worse than more impaired younger subjects and less impaired older subjects on the subtest of decoding facial expressions. (p. 290) On the subtest showing the complete figure (face and body) of the sender, the interaction pattern was reversed and nonsignificant. (p. 290) Rosenthal and his associates stated that they were not able to explain these conflicting results satisfactorily. In comparing deaf subjects' scores with hearing subjects' scores, the deaf sample performed considerably worse on the PONS test than the hearing group. Rosenthal speculated that hearing impairment isolated deaf people from interaction with hearing people and that this could result in their slower development of social skills, including nonverbal communication skills. (p. 290) However, when the PONS test was given a second time to forty-one deaf college students, their scores compared favorably to scores of hearing students. (p. 293) Because these results differed so much from those in the first study on high school subjects, Rosenthal and his associates could not be sure they had attained

accurate data. They reasoned that perhaps the deaf college sample was so unusual that accurate conclusions could not be made concerning the deaf population.

Another significant finding in the Rosenthal et al. study of deaf college students was that female subjects excelled over the male subjects. (p. 292) In fact, females tended to perform better than males on the PONS test for almost all of the populations studied by the Rosenthal group. (p. 152)

Other researchers have used nonverbal tests to assess deaf children's social maturity and ability to empathize with others. Odom, Blanton and Laukhuf (1973) gave fifteen deaf and thirty hearing children (five to eight years of age) two tasks; (1) sort faces portraying nine emotions and (2) match those faces with drawings of appropriate emotion-arousing situations. The deaf children performed as the hearing children did on the first task, but deaf children did not match the faces to the situations as well as the hearing children. (p. 139) The study concluded that deaf children were unable to analyze and interpret emotion-arousing events adequately. Odom et al. suggested two possible reasons for the deaf-hearing difference. First, deaf subjects may have misunderstood the instructional demands of the task itself. Second, perhaps deaf subjects may have learned a different behavioral cue associated with a particular emotion-laden situation. (p. 147)

In another nonverbal study, deaf students at a residential school were trained to recognize facial expressions of six basic

emotions, including surprise, fear, disgust, anger, happy, sad. (Haynes, 1981). Haynes reported that these six emotions are the same for all people in all cultural groups. (p. 34) However, these emotions may be moderated by specific display rules that vary from culture to culture. The results of Haynes' study revealed that while the junior and senior high school students were able to recognize accurately classes of facial expressions of emotion and could then accurately group facial expressions of emotion by class of meaning, they were less able to identify different degrees of the same facial expression of emotion. (p. 63) Haynes concluded that since training had no effect on accuracy of recognition of specific types of facial meaning, it is possible that the eye region on the face has a different social meaning for the deaf. (p. 62)

Communication and Culture

The literature on communication and culture of the deaf community provides insight into other possible causes of inaccurate decoding skills. Deaf people who communicate by American Sign Language (ASL) use facial expressions and body movements that are different from hearing people (Baker, 1976). According to linguists, the eyes, face, head and body postures serve important linguistic functions in ASL and are not simply a "background" behavior to show emotion (Stokoe, 1960; Woodward, 1973; Markowicz, 1980; and Baker, 1980). In fact, there are facial adverbs and several facial signs in ASL created by

muscular movements commonly mastered only by deaf people (Baker, 1980). Perhaps, then, deaf ASL users have different expectations for facial expressions and movements than hearing subjects; as a result, these deaf ASL users may evaluate nonverbal communication scenes differently than hearing subjects. Lytle (1984) found that deaf college students did not use nonverbal behaviors such as proxemics, touch, facial expression, gestures, and eye gaze in the same way as hearing people. For example, proxemics studies report that most Americans stand approximately eighteen inches to four feet from each other during a private or personal conversation (Hall, 1979). Deaf people, however, prefer a greater distance due to the movements of sign language. While hearing Americans are taught to be self conscious of touching others, people who are deaf use touch as a way of initiating conversation. They will often tap another person's shoulder or they will gently kick someone's foot to get attention. Touching oneself is also common because many signs are made on the upper portion of the body. Greetings, too, are often carried out by a hug or a kiss rather than just by a handshake. Facial expressions and gestures seem almost exaggerated in movement when compared to the "quieter" movements of a hearing person. Eye contact between communicators is fixed; that is, a deaf person will look intently at the mouth and face of the sender. Hearing people may become uncomfortable at the intensity of this gaze since they do not need to maintain eye contact with a receiver to communicate.

In addition to communication differences, there are also cultural differences between deaf and hearing people. Approximately 250,000 - 500,000 (out of total general hearing impaired population of 14,953,000) deaf people consider themselves part of a deaf subculture (Baker and Cokely, 1980). This subculture is characterized by use of American Sign Language (ASL), attitudes toward deafness, and acceptance of particular beliefs, behaviors, values, traditions, and folklore (Padden, 1980; DRCC, 1986). Some of the ethnocentric attitudes and behaviors emphasize one's pride in being deaf. For example, the deaf person will stop making any attempt to be like a hearing person. He/she may discontinue using voice, lip movements, hearing aids, or signs in an English word order. Since only five percent of deaf children in the U.S. have deaf parents, enculturation usually occurs in residential schools for the deaf rather than within the family. Berger and Luckman (1967), Hall (1979), Breslin (1981) and Malandro (1983) have shown that cultural differences will influence the accuracy of interpreting the nonverbal behaviors of another culture or subculture. It is probable, then, that the lower scores for deaf subjects resulted from their expectations for nonverbal behaviors similar to those of their own culture.

Meadow (1976, 1980), however, seemed to feel that early communication experience rather than cultural difference is the reason for inaccurate nonverbal decoding skills. Her studies of personality and social development of deaf persons demonstrate

that if communication between deaf children and their parents is absent or is very rudimentary during the important early years of life, deaf children will be limited in their understanding of social norms, rules about acceptable and unacceptable behavior, and causality in both the physical and social world (Meadow, 1976, p. 4). Since most deaf children have hearing parents, there is often limited communication between them. Consequently, deaf children of deaf parents should have significantly better language and social understandings than deaf children of hearing parents (Meadow, 1976, p. 4). If this is the case, then deaf subjects with deaf parents or hearing parents who consistently sign to them should also score higher on tests of nonverbal decoding.

Nonverbal Test Design

The question of how to measure responses to nonverbal behavior is central to any statement about how accurate subjects are in judging the behavior. Accuracy of judging depends on (1) the type of instructions given the judge, (2) whether the emotion presented to the judge is spontaneous and "real" rather than posed or "acted," and (3) the method by which the nonverbal behavior has been presented, i.e. in-person portrayals, still photographs, drawings, videotapes, or films (Knapp, 1980). Research conducted by Knapp (1980) and Rosenthal, et al. (1979) suggest that greater accuracy is achieved when filmed facial and body behaviors are used. Several of the nonverbal studies of

deaf subjects used tests of questionable design (Schiff, 1973; Odom, 1973; Holton, 1976; and Haynes, 1981). Odom, Blanton and Laukhuf (1973) used situational drawings of seven situations; Schiff (1973) used 16 mm motion picture cartoons; Haynes (1981) used photographs of facial expressions. Thus, these test materials may not have communicated nonverbal behavior as accurately as "live" filmed behaviors which may account for low subject scores. More recent research on nonverbal test design by Druckman, Rozelle, and Baxter (1982) has documented the importance of seeing the context in which the behavior occurs. The same nonverbal displays are likely to convey different messages in different situations. (p 39) None of the nonverbal test material mentioned above provided the subjects with the context for the emotion being evaluated. Although the Rosenthal et al. PONS test overcomes at least some of the design problems of previous decoding research, the test is not without its own limitations. Some of these limitations, as described in the test manual, include (1) presents no verbal information, (2) does not measure all possible nonverbal cues, (3) employs a posed criterion instead of real-life behavior, (4) employs only a female decoder (communicator), (5) provides no context for the scenes employed, and (6) measures accuracy of cue recognition more than accuracy of interpretation (Rosenthal et al., 1979, p. 11). According to the authors, these limitations were "intentional design features of the PONS, not unwitting conceptual oversights" (p. 13). Since this test has been widely

used and accepted by nonverbal researchers as a valid test of nonverbal decoding skill, it was chosen as the instrument for this study.

HYPOTHESES

The ~~previous~~ review of literature indicates that studies of deaf subjects have revealed conflicting results concerning their nonverbal decoding ability. In addition, cultural and communication factors may be an important variable in nonverbal decoding skill. Finally, test design is crucial to nonverbal decoding accuracy. This review of the literature has led to several assumptions concerning differences in nonverbal decoding skills of the following groups: (1) males and females, (2) subjects who attended schools for the deaf and subjects who were mainstreamed into public schools, and (3) subjects whose parents communicated by signing and subjects whose parents communicated by speaking or writing. These differences would be reflected through the use of Robert Rosenthal's PONS test.

Therefore, the following hypotheses are posited for study:

Hypothesis 1: Females who are deaf obtain significantly higher scores on the PONS test total and subtest scores than do males who are deaf.

Hypothesis 2: Deaf subjects whose parents sign to them will obtain higher scores than subjects whose parents use speech or writing.

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Hypothesis 3: Deaf subjects who attended mainstream elementary schools will obtain higher PONS test scores than deaf subjects who attended residential elementary schools.

Definitions of Variables

The independent variables used in this study are defined in the following manner:

Sex of Subject is used to determine male-female differences in nonverbal decoding accuracy. The research by Rosenthal et al. (1979) reports that females score higher on the PONS test than males.

Family Communication Mode refers to the method that the parents and child typically use to communicate with each other. Data from a questionnaire distributed for this study indicated that there were two primary methods used by subjects and their parents to communicate with each other: (1) oral speech and/or writing and (2) sign language. The type of signing used, however, varied within the sample. Some subjects indicated they use signed English, the other subjects reported their families use American Sign Language (ASL), similar to a foreign language. This method of signing uses a word order that is different from English and employs facial expressions as well as body movements as linguistic elements of the language. No voice is used with ASL. Some subjects indicated they use only fingerspelling, forming letters of the alphabet with one's fingers.

Type of Schooling refers to two types of elementary schools deaf students typically attend: residential schools for the deaf and mainstream public schools. Residential schools typically consist of two types: (1) those where the children live apart from their families and (2) day schools where the children live at home and commute daily to school. Both types of schools separate deaf children from hearing children. Deaf children who attend the mainstreamed or "integrated" public school tend to spend all or part of the school day in classes with hearing children.

METHODOLOGY

Research Design

To test the hypotheses stated above a $2 \times 2 \times 2$ factorial analysis of variance design was used to compare the scores of subgroups as classified by three independent variables: (1) sex of subject, (2) family communication mode and (3) type of elementary school. There were two levels of each: sex indicated both male and female subjects; family communication mode included both speech and/or writing and sign language; type of elementary school included both residential/day school and mainstream public school. Within these subgroups three dependent variables were compared: (1) total scores for the 180 items of the PONS test; (2) scores for the 60 item face-only subtest; and (3) scores for the 60 item body-only subtest.

Subjects

Seventy-six college students enrolled in a basic Communication Arts course at Gallaudet University in Washington, D.C. participated in this study. There were 68 freshman, 4 sophomores and 4 juniors. Since this course is required of all students, it could be expected that a cross-section of deaf subjects would be obtained by using several sections of the course.

Audiological and communication assessments conducted on all incoming students revealed the following characteristics of the 76 subjects. Eight subjects had mild to moderate hearing loss (27-55 dB) and 68 had severe to profound hearing loss (56-91 dB). Ninety-five percent of these subjects were classified as prelingually deaf, that is, they became deaf before oral language had been acquired. Speechreading tests indicated that 61 subjects were rated as "poor" speechreaders and 15 subjects were rated as "good" speechreaders. Most of the subjects, then, had little or no useable hearing, minimal proficiency at speechreading, and had become deaf prior to learning oral language.

Instrument

The Profile of Nonverbal Sensitivity (PONS) is a standardized test for assessing the ability to decode nonverbal cues in various channels of communication. This test has been given to over 7,000 persons in the United States as well as in

several foreign countries (Rosenthal et al., 1979 p. 20). The more than 200 groups tested using the PONS included university students, children, teenagers, married couples, teachers, physicians, psychotherapists, businessmen, actors, mental patients, and hearing impaired persons. (p. 20)

The complete PONS test consists of a 45 minute black and white videotape composed of 220 numbered auditory and visual segments. (p. 23) In each segment, a 24-year old female portrays 1 of 20 different situations, such as "criticizing someone for being late" or "talking to a lost child." Each scene is numbered and there is a five-second pause between scenes to permit subjects to select an "A" or "B" choice description on the answer sheet (see Appendix 1). Subjects in this study were shown 180 items of the 220 item test. The 40 items with sound and no picture were eliminated from the test. The sound was turned off throughout the test, replicating Rosenthal's procedure when he tested deaf college students at Rochester Institute of Technology. (p. 292)

Procedure

Six sections of Communication Arts 120 (76 subjects) were given the PONS test midway through the semester when the topic of nonverbal communication is usually discussed. The test was given in the regular classroom. A large screen TV monitor (27") was used and seats were rearranged so that subjects could easily see the monitor. Twelve to fourteen subjects took the test at one

time. Before the videotape was started, the subjects completed a questionnaire concerning their mode of family communication and their type of elementary schooling (see Appendix 2). Since the Odom et al. study (1973) concluded that lower scores of deaf subjects might have been attributed to misunderstanding the instructional demands of the task, precautions were taken so that this would not be a factor affecting PONS test scores. For example, to eliminate errors due to language difficulties, certain vocabulary were defined for subjects on a separate sheet of paper (see Appendix 2) and the test administrator answered questions concerning test procedure.

RESULTS

Table I provides the mean scores and standard deviations for sample groups on the PONS total test of 180 nonverbal items. The mean score for males (136.1) was slightly higher than the mean score for females (133.7). There was no difference in the mean scores of families who used oral or written communication (134.9) and families who signed (134.9). The mean score for mainstream public school subjects (136.5) was slightly higher than for residential/day subjects (133.7). None of the mean score differences were statistically significant at the .05 level.

 Insert Table I about here

Table II provides mean scores and standard deviations for the 60 item body-only subtest and 60 item face-only subtest. None of the mean score differences were statistically significant at the .05 level.

 Insert Table II about here

Interactions

An Analysis of Variance was conducted to determine the interaction effect of the three factors (sex of subject, family communication mode, and type of elementary school) upon the PONS test. Table III reflects the results of two-way and three-way analyses. The resulting F ratio indicates there were no significant main effects for these factors upon the PONS score at the predetermined .05 level.

 Insert Table III about here

Table III also reflects the following data concerning the hypotheses of this study:

Comparison by Sex. Hypothesis 1 stated that females who are deaf obtain significantly higher scores on the PONS test than do males who are deaf. This hypothesis was not supported. Table III reports ANOVA results indicating no significant difference between males and females ($F=.63$, $df = 3$, $p<.05$).

Comparison by Family Communication Mode. Hypothesis 2 stated that deaf students whose parents sign to them will obtain higher scores than subjects whose parents use speech and/or write to them. This hypothesis was not supported. Table III reports ANOVA results indicating no significant difference ($F = 1.05$, $df = 1$, $p<.05$).

Comparison by Type of Elementary School. Hypothesis 3 stated that subjects who attended mainstream public elementary school will score significantly higher on the PONS test than subjects who attended residential/day schools. This hypothesis was not supported. Table III reports ANOVA results indicating no significant difference ($F = 1.31$, $df 1$; $p<.05$).

Even though there were no significant main effects, Table III reports a significant three-way interaction among the factors of sex of subject, family communication mode and type of elementary school ($F = 3.98$; $df 1$ $p<.05$) on the total PONS test.

Tables IV and V provide body-only and face-only subtest data. There were no significant main effects for either of these subtests. ANOVAs performed on each of these subtests revealed a significant two-way interaction between family communication mode

and type of elementary schooling ($F = 4.18$, $df\ 1$, $p < .05$) on the body-only subtest.

Insert Table IV about here

Insert Table V about here

DISCUSSION

The purpose of this study was to investigate the difference in nonverbal decoding skills among three selected groups of deaf college students: sex of subject, family communication mode, and type of elementary school. It was hypothesized that there would be significant differences within these groups; however, analysis of the PONS test results did not support the hypotheses of this study.

Females did not perform better than males as they had done in the Rosenthal et al study (1979). Since previous research had shown that females in general perform better on this test, the findings of the study were unexpected.

The second hypothesis of this study was based on findings in the literature that suggested the mode of family communication would affect a deaf child's nonverbal decoding capabilities. This literature suggested that children raised in non-signing families would not receive the feedback from parents necessary to understand the meaning of specific behaviors; thus, these children would be less equipped to decode nonverbal communication. Specifically, it was hypothesized that since deaf children raised in a signing family would have had more communication opportunities to learn about emotional feelings and behaviors, these children would be better equipped to decode nonverbal communication. This study, however, did not support such an hypothesis. Overall, there were no significant differences between subjects whose families used sign language and subjects whose families used oral/written communication (sign language, 134.9; oral/written, 134.9).

The third hypothesis of this study was that cultural differences would have an effect on nonverbal decoding skills. For deaf children, the primary method for developing cultural attitudes and behaviors is through attendance at residential or day schools. These students would tend to be ASL users. As the literature reported, ASL consists of different facial expressions, gestures and body movements than those used by hearing Americans; therefore, it was hypothesized that subjects who attended deaf schools would have a different interpretation of meaning for a particular nonverbal behavior on the PONS test

than mainstreamed deaf subjects who usually do not use sign language. Although there was no significant main effect for the type of school on the PONS test, the mean scores indicate that mainstream public school subjects perform better than residential/day subjects. This finding could support the premise that behaviours portrayed on the PONS tape are not as familiar to residential/day subjects because of cultural factors.

However, in combination some variables do influence nonverbal decoding skill on the PONS test. For example, a two-way analysis of variance indicated that there is a significant interaction between family communication mode and type of elementary school on the body-only subtest. Table VI below shows that in residential schools subjects whose family communication mode is sign language scored higher than subjects whose family communication mode is oral/writing. However, in mainstream schools subjects whose family communication mode is oral/writing scored slightly higher than subjects whose family communication mode is sign language. These results suggest that subjects perform better when communication at home and at school reinforce each other. Since there is no communication mode switching, subjects experience the same kinds of nonverbal behaviors at home and at school. The fact that mainstreamed subjects from signing families scored only a few points below subjects from oral families probably means that their families used simultaneous communication, speech and signs together, so that nonverbal

behaviors would be very similar to those used with oral speech alone.

 Insert Table VI about here

For the total PONS test, there is also a significant three-way ANOVA interaction among the variables of sex of subject, family communication mode and type of elementary school. Specifically, the data in Table VII report that in residential schools the family communication mode made no difference on the total PONS score for males. In the mainstream program, male subjects whose families signed obtained higher scores than male subjects whose families used oral/written communication. This result can be explained by the fact that there were only two subjects in this group and both scored relatively high on the test. Although both are profoundly deaf, they are rated as good speechreaders. Therefore, it could be expected that there has been considerable oral influence in addition to sign language in family communication.

 Insert Table VII about here

Data on female scores show that in residential schools subjects whose families signed obtained higher scores than subjects whose families use oral/written communication modes. However, the pattern is reversed for subjects attending mainstream schools. Here female subjects whose families use oral/written communication scored higher than female subjects whose families use sign language. As in the two-way interaction, subjects performed better on the PONS test when communication used in the home and at the school reinforced each other.

One final observation concerning the data in Table VII is that there is no clear superiority of one sex over the other on this test as there was in the Rosenthal research. Males tended to do somewhat better in the mainstream schools, but females scored higher than males in the residential school. These results may be attributable to the imbalance in the number of subjects in these groups.

IMPLICATIONS AND RECOMMENDATIONS

After careful consideration, there appear to be several limitations to this study that may have had impact upon the findings. First, the PONS test itself has several limitations. Although the PONS has been used to test many different populations and is recognized in the nonverbal literature as a valid measurement, the researcher noted some aspects of the test that may affect subjects' scores. First, the test is quite long and tedious. The same actions and descriptions are used over and

over with and without sound. By item sixty, some subjects became quite restless and began talking to each other about the test. By doing this, these subjects missed the portrayal of the next scene; therefore, they selected an "A" or "B" answer by chance or skipped the question altogether. Restricting the test to sixty items (20 face, 20 body and 20 figure) would reduce the amount of subject boredom. Second, the 5-second exposure time seemed inadequate to determine meaning for the body-only subtest. The impact of this time constraint seemed to be born out by the fact that most errors were made on this part of the test. Thus, while the PONS test has given researchers a means to measure nonverbal decoding skills for the past decade, it still may not be a very accurate instrument.

Second, an uneven sample size concerning sex of subject may have skewed the results in two of the independent variables. For example, this study compared 12 males attending mainstream public schools to 21 females attending mainstream public schools. In the residential school group, 26 males were compared to 17 females. The disparity between males and females in these groupings may have contributed to inconclusive findings in these areas.

Third, this study assumed that speechreading skill had little influence on test results based on the research of Rosenthal, et al (1979). However, upon reexamining subject communication profiles, the better speechreaders tended to perform better on the test than poor speechreaders. These

subjects were about evenly distributed in the two types of schools. If this test were repeated, this variable should be tested. Perhaps success on the PONS test depends more heavily on linguistic ability than nonverbal decoding ability.

Finally, the researcher had difficulty determining family communication mode and type of school from the subject questionnaire. For example, some subjects tended to report that their parents signed to them; however, upon closer questioning they revealed that their parents made simple gestures rather than complex sign language. Usually the mother signed and the father wrote or spoke; thus, it was difficult to decide in which group to place subjects. Furthermore, some subjects had attended more than one type of elementary school. These subjects may have begun in a mainstream public school and then transferred to a residential school or vice versa. The researcher grouped the subjects according to the greater number of years spent at a particular type of school. Such a grouping, however, may not reflect the greater impact carried by the type of school.

Although there were some limitations to this research, there are several implications for future research in this area. First, since there was a significant interaction between the variables of family communication mode and type of elementary school, the PONS test should be repeated using subjects more carefully selected for these variables. Subjects with specific family communication modes and educational backgrounds should be

sought. By doing this the reseracher will have a stronger sample to determine the validity of such an interaction.

Further, to provide stronger evidence for the hypothesis that deaf subjects' PONS scores will be influenced by cultural factors, researchers interested in pursuing this line of investigation may want to proceed in the following manner. This test should be given to deaf subjects whose parents are also deaf. These subjects will be affected most strongly by cultural differences since they will most likely be ASL users, will have attended residential schools and will have social experiences primarily with other deaf persons. About 10% of the Gallaudet University student population is made up of such students. The next most feasible approach to obtaining evidence of cultural differences would be to conduct the PONS test at both residential elementary schools and at mainstream public schools, using a different version of the PONS test which has been designed for children. A requirement of subject selection should be that the child has attended the same type of school for the majority of his/her elementary years. In this way a more accurate picture of the influence of enculturation upon the deaf child can be assessed.

Nonverbal decoding is an important aspect of communication understanding for all people. But for deaf persons accurate nonverbal decoding is the primary factor for effective interaction with hearing people. If this decoding skill is also impaired because of differences in cultural expectations or

inadequate communication training, the deaf person will be even more isolated from participating in the mainstream of a hearing society. If additional research studies extend the findings reported in this paper, then there are important implications for both rehabilitation and special education programs. Both kinds of programs need to provide training in nonverbal communication in their work with deaf children and their parents. Deaf parents need to be aware that behaviors associated with their sign language and hearing impairment may be different than those used by hearing people so that they can teach their children about these differences. Hearing parents should use both signs and speech with their profoundly deaf children so that family communication can be more instructive and satisfying. Preschool and elementary programs for deaf children should build into their curriculum communication activities which encourage the expression and identification of the children's own feelings and attitudes as well as the ability to interpret and evaluate the nonverbal behavior of others. In this way, both the home and the school will reinforce the learning that is necessary for effective communication with others.

TABLE I

Descriptive Statistics of the Sample
Total PONs Score
* * * *

	N	MEAN	SD
SEX			
Males	38	136.1	14.6
Females	38	133.7	13.3
FAMILY COMMUNICATION			
Oral/written	40	134.9	13.0
Sign Language	36	134.9	15.1
TYPE OF ELEMENTARY SCHOOL			
Residential/Day	43	133.7	14.5
Mainstream Public	33	136.5	13.1

TABLE II

Descriptive Statistics of the Sample
Body-Only and Face-Only Subscores

	N	BODY-ONLY		FACE-ONLY	
		MEAN	SD	M	SD
SEX					
Males	38	41.7	4.9	46.9	5.7
Females	38	42.0	4.8	45.0	5.4
FAMILY COMMUNICATION					
Oral/written	40	41.8	4.6	46.4	5.1
Sign Language	36	42.0	5.2	45.5	6.1
TYPE OF ELEMENTARY SCHOOL					
Residential/Day	43	41.3	5.2	45.6	5.7
Mainstream Public	33	42.6	4.4	46.4	5.5

TABLE III
 Analysis of Variance
 Total PONS Score
 by Sex, Family Communication, Type of Elementary School
 * * * * *

Source of Variation	df	F	Signif of F
Main effects	3	0.630	0.598
SEX	1	1.053	0.309
FAMILY COMMUNICATION	1	0.079	0.779
ELEMENTARY SCHOOL	1	1.315	0.256
2-way Interactions	3	1.755	0.164
SEX FAMCOMM	1	0.398	0.530
SEX ELEMSCHOOL	1	0.833	0.365
FAMCOMM ELEMSCHOOL	1	3.139	0.081
3-Way Interactions	1	3.983	0.050
SEX FAMCOMM ELEMSCHOOL	1	3.983	0.050

TABLE IV
 Analysis of Variance
 Body-Only PONS SCORE
 by Sex, Family Communication, Type of Elementary School
 * * * * *

Source of Variation	df	F	Signif of F
Main effects	3	0.460	0.711
SEX	1	0.000	0.992
FAMILY COMMUNICATION	1	0.130	0.719
ELEMENTARY SCHOOL	1	1.278	0.262
2-way Interactions	3	2.867	0.043
SEX FAMCOMM	1	0.005	0.944
SEX ELEMSCHOOL	1	2.184	0.144
FAMCOMM ELEMSCHOOL	1	4.181	0.045
3-way Interactions	1	3.842	0.054
SEX FAMCOMM ELEMSCHOOL	1	3.842	0.054

TABLE V

Analysis of Variance
Face-Only PONS SCORE
by Sex, Family Communication, Type of Elementary School
* * * * *

Source of Variation	df	F	Signif of F
Main effects	3	1.094	0.358
SEX	1	2.561	0.114
FAMILY COMMUNICATION	1	0.194	0.661
ELEMENTARY SCHOOL	1	0.729	0.396
2-way Interactions	3	1.921	0.134
SEX FAMCOMM	1	2.433	0.123
SEX ELEMSCHOOL	1	0.547	0.462
FAMCOMM ELEMSCHOOL	1	2.412	0.125
3-way Interactions	1	2.116	0.150
SEX FAMCOMM ELEMSCHOOL	1	2.116	0.150

TABLE VI

TWO-WAY ANOVA
body-only subtest

	Oral/Writing	Sign Language
	N: 19	N: 24
	Mean: 39.89	Mean: 42.58
Residential	Std Dev. 4.79	Std Dev. 5.31
	N: 21	N: 12
	Mean: 43.62	Mean: 40.83
Mainstream	Std Dev. 3.72	Std Dev. 5.13

TABLE VII

THREE-WAY ANOVA

Total PONS Test

Family Communication

		Males	
		Oral/writing	Sign Language
Residential	N:	11	N: 15
	Mean:	133.27	Mean: 133.67
	Std Dev:	12.39	Std Dev: 18.63
Mainstream	N:	10	N: 2
	Mean:	140.80	Mean: 147.50
	Std Dev:	9.80	Std Dev: 3.53

Family Communication

		Females	
		Oral/writing	Sign Language
Residential	N:	8	N: 9
	Mean:	126.37	Mean: 141.00
	Std Dev:	11.96	Std Dev: 8.9
Mainstream	N:	11	N: 10
	Mean:	137.63	Mean: 129.00
	Std Dev:	14.72	Std Dev: 12.99

REFERENCES

- Baker, C. (1976). Eye Openers in ASL. A paper presented at the Sixth California Association Conference Proceedings, San Diego State University.
- Baker, C. (1980). On the Terms Verbal and Nonverbal. Paper delivered at the First International Symposium of Sign Language Research.
- Baker, C., & Cokely, D. (1980). American Sign Language. Maryland: T. J. Publishers, Inc.
- Berger, P.L., & Luckman, T. (1967). The Social Construction Of Reality. New York: Doubleday.
- Birdwhistell, R. (1970). Kinesics and Context. Philadelphia, Pa: University of Pennsylvania Press.
- Brislin, R.W. (1981). Cross Cultural Encounters. New York: Pergamon Press.
- Druckman, D., Rozelle, R., & Baxter, J. (1982). Nonverbal Communication: Survey, Theory, and Research. Beverly Hills: Sage Publications.
- Hall, E. (1979). Cultural Models in Transcultural Communication. In Aaron Wolfgang (Ed.), Nonverbal Behavior: Application and Cultural Implications. New York: Academic Press.
- Haynes, T. (1981). An Investigation of the Recognition of Facial Expression of Emotion After Training of Deaf Students at a Residential School. (Eric Document Reproduction Service No. EC 140981. 8203)
- Hickson, M. & Stacks, D. (1985). Nonverbal Communication: Studies and Application. Dubuque, Iowa: Wm. C. Brown Publishers.
- Holton, S. (1976). An Exploratory Study into the Proxemic and Verbal Behavior of "Normals" in Dyadic Interaction with the Deaf. Unpublished doctoral dissertation, Case Western Reserve University.
- Karchmer, M., Milone, M., & Wolk, S. (1979). Educational Significance of Hearing Loss at Three Levels of Severity. American Annals of the Deaf, 97-109.
- Karchmer, M., & Petersen, L. (June, 1980). Commuter Students at Residential Schools for the Deaf. Report by the Office of Demographic Studies. Gallaudet College. Washington, D.C.

- Knapp, M. (1980). Essentials of Nonverbal Communication. New York: Holt, Rinehart and Winston.
- Lytle, J. (1984). Nonverbal Communication and the Deaf. ACA Bulletin. 50, 53-56.
- Malandro, L., & Barker, L. (1983). Nonverbal Communication. Reading, Massachusetts: Addison-Wesley.
- Markowicz, H. (1980). Myths about American Sign Language. In H. Lane & F. Grosjean (Eds.), Recent Perspectives on American Sign Language. New Jersey: Lawrence Erlbaum Associates.
- Markowicz, H., & Woodward, J. (1986). Language and the Maintenance of Ethnic Boundaries in the Deaf Community. Report by the Office of Demographic Studies. Gallaudet College. Washington, D.C.
- Meadow, K. (1976). Personality and Social Development of Deaf Persons. Journal of Rehabilitation of the Deaf, 9, 1-12.
- Odom, P.B., Blanton, R.L., & Laukhuf, C. (1973). Facial Expressions and Interpretation of Emotion-Arousing Situations in Deaf and Hearing Children. Journal of Abnormal Child Psychology, 1, 2, 139-151.
- Padden, C. (1980). Culture of Deaf People. In C. Baker & R. Battison (Eds.), Sign Language and the Deaf Community. Silver Spring, Md: National Association of the Deaf.
- Padden, C., & Markowicz, H. (1980). Cultural Conflicts Between Hearing and Deaf Communities. Report by the Linguistics Research Laboratory. Gallaudet College, Washington, D.C.
- Ries, P. (1974). Demographic Profile of Hearing Impaired Students. PRWAD Annual. 17-42.
- Rosenthal, R., Hall, J., DiMatteo, M., Rogers, P., & Archer, D. (1979). Sensitivity to Nonverbal Communication: The PONS Test. Baltimore, Md: The Johns Hopkins University Press.
- Rosenthal, R., Hall, J., DiMatteo, M., Rogers, P., & Archer, D. (1979). The PONS Test Manual: Profile of Nonverbal Sensitivity. New York: Irvington Publishers, Inc.
- Schiff, W. (1973). Social Perception in Deaf and Hearing Adolescents. Exceptional Children, 39, 289-297.
- Woodward, J., Allen, T., & Schildroth, A. (1985). Linguistic and Cultural Role Models for Hearing-Impaired Children in Elementary School Programs. Report prepared by the Office of Demographic Studies. Gallaudet College. Washington, D.C.

APPENDIX 1

Still photographs illustrating the three visual channels in the PONS film; face, body, and figure.



NAME _____ PRESENT ADDRESS _____
TOWN AND COUNTRY OF BIRTH _____ AGE _____ sex _____
PRIMARY LANGUAGE SPOKEN _____ SECONDARY LANGUAGE SPOKEN _____
FATHER'S OCCUPATION _____ MOTHER'S OCCUPATION _____
FIELD OF STUDY _____ AVERAGE GRADE IN LAST YEAR OF SCHOOL _____

INSTRUCTIONS: Please circle the letter (A or B) next to the label which best describes the scene you have just seen.

SAMPLE ANSWER: Scene 1. A. admiring a baby
B. applying for a job

- | | |
|--|---|
| 1) A. (no picture)
B. | (12) A. admiring nature
B. expressing motherly love |
| 2) A. talking to a lost child
B. admiring nature | (13) A. expressing deep affection
B. nagging a child |
| 3) A. (no picture)
B. | (14) A. expressing motherly love
B. asking forgiveness |
| 4) A. (no picture)
B. | (15) A. admiring nature
B. helping a customer |
| 5) A. criticizing someone for
being late
B. expressing gratitude | (16) A. admiring nature
B. saying a prayer |
| 6) A. helping a customer
B. expressing gratitude | (17) A. nagging a child
B. admiring nature |
| 7) A. (no picture)
B. | (18) A. nagging a child
B. criticizing someone for being
late |
| 8) A. talking about one's
wedding
B. expressing gratitude | (19) A. asking forgiveness
B. leaving on a trip |
| 9) A. helping a customer
B. talking about one's
divorce | (20) A. expressing gratitude
B. leaving on a trip |
| 10) A. talking about the death
of a friend
B. trying to seduce someone | (21) A. leaving on a trip
B. returning faulty item to a
store |
| 11) A. (no picture)
B. | (22) A. returning faulty item to a
store
B. talking about one's divorce |

- 23) A. (no picture)
B.
- 24) A. talking about the death of a friend
B. threatening someone
- 25) A. expressing deep affection
B. saying a prayer
- 26) A. expressing deep affection
B. trying to seduce someone
- 27) A. nagging a child
B. expressing motherly love
- 28) A. leaving on a trip
B. ordering food in a restaurant
- 29) A. helping a customer
B. expressing jealous anger
- 30) A. criticizing someone for being late
B. expressing gratitude
- 31) A. (no picture)
B.
- 32) A. admiring nature
B. expressing strong dislike
- 33) A. ordering food in a restaurant
B. criticizing someone for being late
- 34) A. leaving on a trip
B. talking about one's wedding
- 35) A. talking to a lost child
B. expressing strong dislike
- 36) A. trying to seduce someone
B. expressing jealous anger
- 37) A. expressing strong dislike
B. expressing deep affection
- 38) A. leaving on a trip
B. threatening someone
- 39) A. expressing deep affection
B. talking about the death of a friend
- 40) A. talking to a lost child
B. criticizing someone for being late
- 41) A. ordering food in a restaurant
B. expressing gratitude
- 42) A. expressing motherly love
B. Threatening someone
- 43) A. expressing strong dislike
B. ordering food in a restaurant
- 44) A. expressing motherly love
B. talking to a lost child
- 45) A. expressing deep affection
B. nagging a child
- 46) A. asking forgiveness
B. saying a prayer
- 47) A. (no picture)
B.
- 48) A. admiring nature
B. expressing strong dislike
- 49) A. expressing motherly love
B. leaving on a trip
- 50) A. talking about one's divorce
B. ordering food in a restaurant
- 51) A. asking forgiveness
B. nagging a child
- 52) A. admiring nature
B. expressing motherly love

- 53) A. returning faulty item to a store
B. criticizing someone for being late
- 54) A. talking about one's wedding
B. expressing deep affection
- 55) A. (no picture)
B.
- 56) A. admiring nature
B. ordering food in a restaurant
- 57) A. returning faulty item to a store
B. Helping a customer
- 58) A. expressing strong dislike
B. expressing gratitude
- 59) A. expressing deep affection
B. expressing gratitude
- 60) A. saying a prayer
B. threatening someone
- 61) A. (no picture)
B.
- 62) A. (no picture)
B.
- 63) A. talking to a lost child
B. expressing gratitude
- 64) A. talking about one's wedding
B. saying a prayer
- 65) A. talking to a lost child
B. threatening someone
- 66) A. (no picture)
B.
- 67) A. expressing motherly love
B. returning faulty item to a store
- 68) A. expressing gratitude
B. expressing strong dislike
- 69) A. expressing strong dislike
B. talking about one's wedding
- 70) A. helping a customer
B. asking forgiveness
- 71) A. threatening someone
B. expressing motherly love
- 72) A. nagging a child
B. talking to a lost child
- 73) A. (no picture)
B.
- 74) A. talking about one's divorce
B. trying to seduce someone
- 75) A. expressing jealous anger
B. helping a customer
- 76) A. talking about one's divorce
B. expressing deep affection
- 77) A. expressing gratitude
B. talking to a lost child
- 78) A. expressing deep affection
B. asking forgiveness
- 79) A. threatening someone
B. nagging a child

- 80) A. talking about the death of a friend
B. trying to seduce someone
- 81) A. (no picture)
B.
- 82) A. trying to seduce someone
B. criticizing someone for being late
- 83) A. helping a customer
B. admiring nature
- 84) A. returning faulty item to a store
B. nagging a child
- 85) A. nagging a child
B. leaving on a trip
- 86) A. talking about one's wedding
B. admiring nature
- 87) A. criticizing someone for being late
B. expressing deep affection
- 88) A. (no picture)
B.
- 89) A. asking forgiveness
B. expressing strong dislike
- 90) A. expressing motherly love
B. helping a customer
- 91) A. (no picture)
B.
- 92) A. criticizing someone for being late
B. helping a customer
- 93) A. (no picture)
B.
- 94) A. (no picture)
B.
- 95) A. (no picture)
B.
- 96) A. (no picture)
B.
- 97) A. expressing jealous anger
B. asking forgiveness
- 98) A. expressing motherly love
B. criticizing someone for being late
- 99) A. talking about one's wedding
B. talking about the death of a friend
- 100) A. expressing strong dislike
B. asking forgiveness
- 101) A. saying a prayer
B. helping a customer
- 102) A. nagging a child
B. leaving on a trip
- 103) A. talking about one's divorce
B. asking forgiveness
- 104) A. ordering food in a restaurant
B. expressing jealous anger
- 105) A. (no picture)
B.
- 106) A. (no picture)
B.
- 107) A. leaving on a trip
B. nagging a child
- 108) A. saying a prayer
B. talking about one's divorce
- 109) A. expressing strong dislike
B. trying to seduce someone

- 110) A. ordering food in a restaurant
B. asking forgiveness
- 111) A. talking about one's wedding
B. leaving on a trip
- 112) A. (no picture)
B.
- 113) A. expressing jealous anger
B. criticizing someone for being late
- 114) A. talking about one's divorce
B. threatening someone
- 115) A. expressing strong dislike
B. returning faulty item to a store
- 116) A. ordering food in a restaurant
B. threatening someone
- 117) A. talking to a lost child
B. criticizing someone for being late
- 118) A. admiring nature
B. nagging a child
- 119) A. expressing strong dislike
B. helping a customer
- 120) A. talking about one's wedding
B. ordering food in a restaurant
- 121) A. expressing gratitude
B. expressing motherly love
- 122) A. leaving on a trip
B. expressing deep affection
- 123) A. nagging a child
B. talking to a lost child
- 124) A. returning faulty item to a store
B. expressing motherly love

- 125) A. talking about one's divorce
B. admiring nature
- 126) A. expressing deep affection
B. talking about the death of a friend
- 127) A. talking about one's divorce
B. admiring nature
- 128) A. expressing deep affection
B. admiring nature
- 129) A. talking to a lost child
B. admiring nature
- 130) A. returning faulty item to a store
B. talking about the death of a friend
- 131) A. talking about one's wedding
B. returning faulty item to a store
- 132) A. (no picture)
B.
- 133) A. asking forgiveness
B. helping a customer
- 134) A. expressing strong dislike
B. ordering food in a restaurant
- 135) A. returning faulty item to a store
B. talking about the death of a friend
- 136) A. expressing deep affection
B. saying a prayer
- 137) A. saying a prayer
B. criticizing someone for being late
- 138) A. talking about one's wedding
B. talking about one's divorce

- 139) A. (no picture)
B.
- 140) A. expressing jealous
anger
B. threatening someone
- 141) A. asking forgiveness
B. expressing motherly
love
- 142) A. admiring nature
B. ordering food in a restaurant
- 143) A. expressing motherly
love
B. expressing jealous
anger
- 144) A. (no picture)
B.
- 145) A. (no picture)
B.
- 146) A. talking about one's
divorce
B. leaving on a trip
- 147) A. (no picture)
B.
- 148) A. trying to seduce
someone
B. criticizing someone for
being late
- 149) A. expressing deep affec-
tion
B. admiring nature
- 150) A. talking about the death
of a friend
B. expressing motherly
love
- 151) A. (no picture)
B.
- 152) A. (no picture)
B.
- 153) A. (no picture)
B.
- 154) A. leaving on a trip
B. talking to a lost child

- 155) A. talking about the death
of a friend
B. expressing jealous
anger
- 156) A. helping a customer
B. expressing gratitude
- 157) A. asking forgiveness
B. saying a prayer
- 158) A. (no picture)
B.
- 159) A. expressing jealous
anger
B. saying a prayer
- 160) A. (no picture)
B.
- 161) A. expressing strong dis-
like
B. expressing deep affec-
tion
- 162) A. expressing deep affec-
tion
B. talking about the death
of a friend
- 163) A. returning faulty item to
a store
B. leaving on a trip
- 164) A. expressing gratitude
B. expressing jealous
anger
- 165) A. talking about one's
wedding
B. trying to seduce
someone
- 166) A. talking to a lost child
B. expressing jealous
anger
- 167) A. (no picture)
B.
- 168) A. talking about one's
divorce
B. asking forgiveness
- 169) A. trying to seduce
someone
B. asking forgiveness

- 170) A. expressing gratitude
B. expressing jealous anger
- 171) A. (no picture)
B.
- 172) A. returning faulty item to a store
B. expressing strong dislike
- 173) A. expressing gratitude
B. talking to a lost child
- 174) A. expressing gratitude
B. returning faulty item to a store
- 175) A. expressing motherly love
B. criticizing someone for being late
- 176) A. ordering food in a restaurant
B. expressing jealous anger
- 177) A. expressing gratitude
B. returning faulty item to a store
- 178) A. expressing strong dislike
B. talking about one's divorce
- 179) A. talking about one's divorce
B. talking about the death of a friend
- 180) A. ordering food in a restaurant
B. returning faulty item to a store
- 181) A. expressing motherly love
B. talking to a lost child
- 182) A. trying to seduce someone
B. talking about one's wedding
- 183) A. leaving on a trip
B. trying to seduce someone
- 184) A. talking about the death of a friend
B. asking forgiveness
- 185) A. trying to seduce someone
B. talking to a lost child
- 186) A. expressing motherly love
B. ordering food in a restaurant
- 187) A. saying a prayer
B. expressing jealous anger
- 188) A. trying to seduce someone
B. talking about the death of a friend
- 189) A. ordering food in a restaurant
B. talking about the death of a friend
- 190) A. (no picture)
B.
- 191) A. expressing motherly love
B. criticizing someone for being late
- 192) A. saying a prayer
B. nagging a child
- 193) A. (no picture)
B.
- 194) A. talking about one's divorce
B. returning faulty item to a store
- 195) A. threatening someone
B. helping customer
- 196) A. criticizing someone for being late
B. talking about one's divorce

- 197) A. expressing jealous anger
B. nagging a child
- 198) A. talking about one's wedding
B. expressing jealous anger
- 199) A. trying to seduce someone
B. expressing deep affection
- 200) A. threatening someone
B. expressing strong dislike
- 201) A. talking about one's wedding
B. talking about the death of a friend
- 202) A. talking about one's divorce
B. talking about one's wedding
- 203) A. threatening someone
B. expressing strong dislike
- 204) A. admiring nature
B. criticizing someone for being late
- 205) A. ordering food in a restaurant
B. nagging a child
- 206) A. expressing gratitude
B. threatening someone
- 207) A. talking about one's wedding
B. saying a prayer
- 208) A. admiring nature
B. talking about the death of a friend
- 209) A. trying to seduce someone
B. saying a prayer
- 210) A. talking about one's divorce
B. threatening someone
- 211) A. expressing deep affection
B. trying to seduce someone
- 212) A. saying a prayer
B. talking about one's wedding
- 213) A. leaving on a trip
B. trying to seduce someone
- 214) A. saying a prayer
B. talking to a lost child
- 215) A. admiring nature
B. talking about one's wedding
- 216) A. (no picture)
B.
- 217) A. leaving on a trip
B. ordering food in a restaurant
- 218) A. expressing strong dislike
B. talking to a lost child
- 219) A. (no picture)
B.
- 220) A. (no picture)
B.

APPENDIX 2



G A L L A U D E T

DEPARTMENT OF COMMUNICATION ARTS

(202) 651-8888 Voice and TDD

KENDALL GREEN
800 FLORIDA AVENUE NE
WASHINGTON, DC 20002

March 3, 1986

Dear Students:

You are participating in a study to investigate the factors that are important in a deaf person's ability to understand nonverbal behavior of hearing people. The test you are taking has been given to two other groups of deaf subjects, junior high school students and college students at NTID. But the results of these tests were confusing. The researchers did not find out accurate information about deaf persons' ability to understand nonverbal communication. Therefore, I would like to do the test again with deaf students from Gallaudet College. The information I gather from the study may be helpful in developing effective communication strategies for deaf persons.

This study is part of my doctoral work at George Mason University. Your name will not be identified in my study. Your private information will be kept confidential.

Thank you for your help.

Yours,

Jayne S. Lytle
Associate Professor

Dayne M. Lytle
Communication Arts Department
Gallaudet College
Washington, D.C. 20002
Spring Semester 1986

Student Code Number _____

Degree of hearing impairment _____

Speechreading score _____

(A) STUDENT CLASSIFICATION

_____ Freshman _____ Sophomore _____ Junior _____ Senior

(B) SEX

1. _____ Female 2. _____ Male

(C) HEARING STATUS OF PARENTS.

Mother: 1. _____ Normal Hearing 2. _____ Hearing Impaired
Father: 1. _____ Normal Hearing 2. _____ Hearing Impaired

(D) PARENTS COMMUNICATION - My parents communicate to me by:

<u>Mother</u>	<u>Father</u>	
_____	_____	1. Manual communication (signs and fingerspelling)
_____	_____	2. Auditory/oral only (speech)
_____	_____	3. Oral and manual together (speech and sign language)
_____	_____	4. Other (specify) _____

(E) STUDENT COMMUNICATION WITH PARENTS - I primarily use:

_____ 1. Manual communication (signs and fingerspelling)
_____ 2. Oral communication (speech)
_____ 3. Oral and manual together (speech and sign language)
_____ 4. Other (specify) _____

(F) TYPE OF SCHOOL ATTENDED - Grades Kindergarten through 6th

_____ 1. Residential School for the Deaf (lived at school)
_____ 2. Day school for the Deaf
_____ 3. Regular Education Facility for hearing students
_____ 4. Other (specify) _____

(G) TYPE OF SCHOOL ATTENDED - High School (Grades 9 through 12)

_____ 1. Residential School for the Deaf (lived at school)
_____ 2. Day school for the Deaf
_____ 3. Regular Education Facility for hearing students
_____ 4. Other (specify) _____

Confidential information which would permit identification of any individual will NOT be released!!

I _____ agree to participate in this research study.

DATE

FONS Test Vocabulary

Admiring nature

(the person loves to be outside looking at the trees, flowers, etc)

Criticizing someone
for being late

(getting angry at a person for being late)

Expressing gratitude

(saying thank you to someone)

Trying to seduce
someone

(trying to get someone to do something wrong, immoral or illegal)

Expressing deep affection

(telling someone you really like or love him/her)

Nagging a child

(to bother or annoy a child by telling him/her what to do)

Helping a customer

(a person who is buying something)

Returning a faulty item to a store

(a product that has something wrong with it)

Threatening someone

(to say you will hurt or injure someone)